

REMARKS

Herein, the "Action" or "Office Action" refers to the Office Action dated October 10, 2003.

Applicant respectfully requests reconsideration and allowance of all of the claims of the present application. Claims 1-35 are presently pending. Claims 1, 10, 15, and 26 are amended herein. No claims are cancelled herein. New claims 36-38 are added herein.

Rejections under 35 U.S.C. § 103

Claims 1-21, 25-31 and 35 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over prior art admitted by the applicant in the specification in the instant application in view of U.S. Patent No. 5,282,754 to Kish et al (hereinafter "Kish").

Claims 22-24 and 32-34 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over prior art admitted by the applicant in the specification in the instant application.

Applicant traverses these rejections and asks that they be withdrawn and the case passed along to issuance.

Claims 1-9

As amended, claim 1 recites an apparatus comprising [emphasis added]:

- a first device;
- a first connector coupled to the first device;
- a second connector coupled to the first connector through a first plurality of conductors, wherein alternating pairs of conductors are

reversed *at any position* between the first and second connectors;
and

- a second device coupled to the second connector through a second plurality of conductors.

In making out the rejection of claim 1, the Office Action argues that Kish teaches reversing alternating pairs of conductors to eliminate or reduce crosstalk. The Office cites to Fig. 4 and column 4, lines 43-62, of Kish to support its argument, the text of which is reproduced below [emphasis added]:

In practice, as may be seen from Fig. 4, it is considered that primary windings of an effective transformer are produced through the electrical pathways associated with the conductors 84 and 86. Secondary windings will be provided by the immediately adjacent pathways through and associated with the cross-over conductors 88 and 90. Because of the crossover of the conductors 88 and 90, then the *area 96* which is bounded at its sides by the conductors 92 and 94 and the conductors 88 and 90 as far as the crossover position 98 is *substantially equal to the area 100* bounded by the remainder of the conductors 88 and 90 and the conductors 34 and 36. If the voltage induced in the secondary winding is positive in the section associated with the area 96, then it is negative in the section associated with the area 100. As a result *if the areas 96 and 100 are substantially equal* then the crosstalk through the connector assembly of connectors 10, 50 and 60 is effectively reduced to zero. The slight differences in the areas 96 and 100 will produce negligible cross-talk.

As shown, Kish requires that the crossover be such that the resulting areas 96 and 100 are *substantially equal*. In order for areas 96 and 100 to be substantially equal, the crossover must be at the *midpoint* between the conductor pairs 92/96 and 34/36. As such, Kish teaches *directly away* from Applicant's claimed subject matter by *requiring* that the crossover be at the midpoint. In contrast, Applicant's claim 1 recites that alternating pairs of conductors are

1 reversed *at any position* between the first and second connectors. For at least this
2 reason, claim 1 is allowable.

3 Claims 2-9 depend from claim 1 and, as such, are allowable as depending
4 from an allowable base claim. These claims are also allowable for their own
5 recited features which, in combination with those recited in claim 1, are neither
6 shown nor suggested by the references of record either singly or in combination
7 with one another.

8 9 Claims 10-14

10 As amended, claim 10 recites an apparatus comprising [emphasis added]:

- 11 ○ a first integrated circuit including a plurality of differential drivers;
- 12 ○ a first connector coupled to the first integrated circuit;
- 13 ○ a second connector coupled to the first connector through a plurality
14 of electrical conductors, wherein alternating pairs of the electrical
15 conductors are reversed *at any position* between the first and second
16 connectors; and
- 17 ○ a second integrated circuit coupled to the second connector, wherein
18 the second integrated circuit includes a plurality of differential
19 receivers.

20 In making out the rejection of claim 10, the Office Action again argues that
21 Kish teaches reversing alternating pairs of conductors to eliminate or reduce
22 crosstalk. The Office cites to Fig. 4 and column 4, lines 43-62, of Kish to support
23 its argument, the text of which is reproduced above.

24 As discussed above in relation to claim 1, Kish requires that the crossover
25 be such that the resulting areas 96 and 100 are *substantially equal*. In order for
areas 96 and 100 to be substantially equal, the crossover must be at the *midpoint*
between the conductor pairs 92/96 and 34/36. As such, Kish teaches *directly away*
from Applicant's claimed subject matter by *requiring* that the crossover be at the

1 midpoint. In contrast, Applicant's claim 10 recites that alternating pairs of the
2 electrical conductors are reversed *at any position* between the first and second
3 connectors. For at least this reason, claim 10 is allowable.

4 Claims 11-14 depend from claim 10 and, as such, are allowable as
5 depending from an allowable base claim. These claims are also allowable for their
6 own recited features which, in combination with those recited in claim 10, are
7 neither shown nor suggested by the references of record either singly or in
8 combination with one another.

9
10 Claims 15-21

11 As amended, claim 15 recites an apparatus comprising [emphasis added]:

- 12 ◦ a printed circuit board;
- 13 ◦ a plurality of connectors disposed on the printed circuit board;
- 14 ◦ a first integrated circuit disposed on a first substrate, wherein the
15 first substrate is configured to be coupled to one of the plurality of
16 connectors;
- 17 ◦ a second integrated circuit disposed on a second substrate, wherein
18 the second substrate is configured to be coupled to one of the
19 plurality of connectors; and
- 20 ◦ a first plurality of electrical conductors coupled to the plurality of
21 connectors, wherein alternating pairs of conductors between adjacent
22 connectors are reversed *at a location offset toward one of the*
23 *plurality of connectors.*

24 In making out the rejection of claim 15, the Office Action again argues that
25 Kish teaches reversing alternating pairs of conductors to eliminate or reduce
crosstalk. The Office cites to Fig. 4 and column 4, lines 43-62, of Kish to support
its argument, the text of which is reproduced above.

As discussed above in relation to claims 1 and 10, Kish requires that the
crossover be such that the resulting areas 96 and 100 are *substantially equal*. In

1 order for areas 96 and 100 to be substantially equal, the crossover must be at the
2 *midpoint* between the conductor pairs 92/96 and 34/36. As such, Kish teaches
3 *directly away* from Applicant's claimed subject matter by *requiring* that the
4 crossover be at the midpoint. In contrast, Applicant's claim 15 recites that
5 alternating pairs of conductors between adjacent connectors are reversed *at a*
6 *location offset toward one of the plurality of connectors*. For at least this reason,
7 claim 15 is allowable.

8 Claims 16-21 depend from claim 15 and, as such, are allowable as
9 depending from an allowable base claim. These claims are also allowable for their
10 own recited features which, in combination with those recited in claim 15, are
11 neither shown nor suggested by the references of record either singly or in
12 combination with one another.

13 14 Claims 22-25

15 Claim 22 recites an apparatus comprising [emphasis added]:

- 16 ◦ a first device having an associated first inductive coupling
coefficient; and
- 17 ◦ a second device coupled to the first device through a plurality of
18 electrical conductors, the second device having an associated second
19 inductive coupling coefficient, wherein the first inductive coupling
coefficient is *adjusted* to be substantially the same as the second
inductive coupling coefficient.

20
21 In making out the rejection of claim 22, the Office Action states that "the
22 admitted prior art does not disclose that the first device and second device have the
23 same inductive coefficients." Applicant agrees. However, the Office Action then
24 takes Official Notice and argues that "implementing a system, which has a
25 mismatch problem between two communication ends, with a matching circuit at

1 the receiving end of the two communication ends in order to overcome the
2 mismatch is well-known in the art.” Applicant is unclear what the Official Action
3 means by this statement or how it relates to Applicant’s claimed subject matter.

4 The term “matching circuit” is not mentioned in Applicant’s claim 22. Therefore,
5 Applicant respectfully traverses the rejection and requests that the Office provide
6 documentary evidence in the next Office Action if the rejection is to be
7 maintained.

8 Applicant respectfully submits that claim 22 is allowable.

9 Claims 23-25 depend from claim 22 and, as such, are allowable as
10 depending from an allowable base claim. These claims are also allowable for their
11 own recited features which, in combination with those recited in claim 22, are
12 neither shown nor suggested by the references of record either singly or in
13 combination with one another.

14
15 Claims 26-31

16 As amended, claim 26 recites a method comprising [emphasis added]:

- 17 ○ generating a plurality of differential signals;
- 18 ○ transmitting the plurality of differential signals through a first
19 connector and a second connector to a plurality of differential
20 receivers;
- 21 ○ reversing the polarity of alternating differential signals *at any
position* between the first and second connectors; and
- 22 ○ reversing the polarity of alternating differential signals between the
23 second connector and the plurality of differential receivers.

24 In making out the rejection of claim 26, the Office Action again argues that
25 Kish teaches reversing alternating pairs of conductors to eliminate or reduce

1 crosstalk. The Office cites to Fig. 4 and column 4, lines 43-62, of Kish to support
2 its argument, the text of which is reproduced above.

3 As discussed above in relation to claims 1, 10, and 15, Kish requires that
4 the crossover be such that the resulting areas 96 and 100 are *substantially equal*.
5 In order for areas 96 and 100 to be substantially equal, the crossover is at the
6 *midpoint* between the conductor pairs 92/96 and 34/36. As such, Kish teaches
7 *directly away* from Applicant's claimed subject matter by *requiring* that the
8 crossover be at the midpoint. In contrast, Applicant's claim 26 recites the act of
9 reversing the polarity of alternating differential signals *at any position* between
10 the first and second connectors. For at least this reason, claim 26 is allowable.

11 Claims 27-31 depend from claim 26 and, as such, are allowable as
12 depending from an allowable base claim. These claims are also allowable for their
13 own recited features which, in combination with those recited in claim 26, are
14 neither shown nor suggested by the references of record either singly or in
15 combination with one another.

16 17 Claims 32-35

18 Claim 32 recites a method comprising [emphasis added]:

- 19 ○ *modifying* a transmitter package such that the coupling coefficient of
20 the transmitter package is substantially the same as the coupling
21 coefficient of a receiver package;
- 22 ○ transmitting multiple pairs of differential signals using the
23 transmitter package; and
- 24 ○ receiving the multiple pairs of differential signals using the receiver
25 package.

24 In making out the rejection of claim 32, the Office Action states that "the
25 admitted prior art does not disclose that the first device and second device have the

1 same inductive coefficients.” Applicant agrees. However, the Office Action then
2 takes Official Notice and argues that “implementing a system, which has a
3 mismatch problem between two communication ends, with a matching circuit at
4 the receiving end of the two communication ends in order to overcome the
5 mismatch is well-known in the art.” Applicant is unclear what the Official Action
6 means by this statement or how it relates to Applicant’s claimed subject matter.
7 The term “matching circuit” is not mentioned in Applicant’s claim 32. Therefore,
8 Applicant respectfully traverses the rejection and requests that the Office provide
9 documentary evidence in the next Office Action if the rejection is to be
10 maintained.

11 Applicant respectfully submits that claim 32 is allowable.

12 Claims 33-35 depend from claim 32 and, as such, are allowable as
13 depending from an allowable base claim. These claims are also allowable for their
14 own recited features which, in combination with those recited in claim 32, are
15 neither shown nor suggested by the references of record, either singly or in
16 combination with one another.

17
18 New Claims

19 New claims 36-38 are added herein. Applicant submits that these new
20 claims are allowable as depending from an allowable base claim. Applicant
21 submits that these new claims are also allowable for their own recited features.
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23
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25

1 **Conclusion**

2 All pending claims are in condition for allowance. Applicant respectfully
3 requests reconsideration and prompt issuance of the application. If any issues
4 remain that prevent issuance of this application, the Examiner is urged to contact
5 the undersigned attorney before issuing a subsequent Office Action.
6

7 Respectfully Submitted,

8
9 Dated: Jan. 9, 2004

By: _____

Steven R. Sponseller
Reg. No. 39,384
(509) 324-9256